

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 February 2003 (20.02.2003)

PCT

(10) International Publication Number
WO 03/015174 A3

(51) International Patent Classification⁷: **H01L 29/00**

(21) International Application Number: **PCT/SK02/00018**

(22) International Filing Date: **15 July 2002 (15.07.2002)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
60/310,546 **7 August 2001 (07.08.2001)** **US**

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LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK,
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

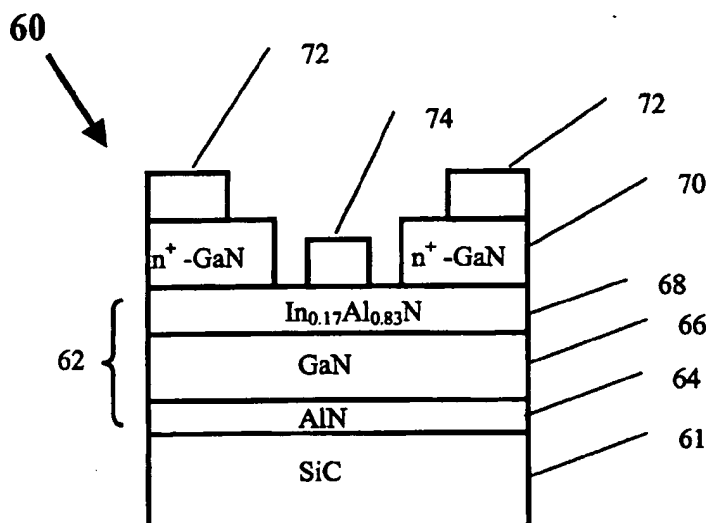
— with international search report

(88) Date of publication of the international search report:
16 October 2003

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: **HIGH ELECTRON MOBILITY DEVICES**



(57) Abstract: The present invention is directed to high frequency, high power or low noise devices such as low noise amplifiers, amplifiers operating at frequencies in the range of 1 GHz up to 400 GHz, radars, portable phones, satellite broadcasting or communication systems, or other devices and systems that use high electron mobility transistors, also called hetero-structure field-effect transistors. A high electron mobility transistor (60 and 80) includes a substrate (61), a quantum well structure (62) and electrodes (72 and 74). The high electron mobility transistor has a polarization-induced charge of high density. Preferably, the quantum well structure (62) includes an AlN buffer layer (64), an un-doped GaN layer (66), and an un-doped InAlN layer (68).

WO 03/015174 A3